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INTIB PROGRAMME:

Review and Vision for the Future*

Prepared by the
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INTRODUCTION

UNIDO is the specialized agency in the United Nations system devoted to accelerating industrial development in the developing countries and currently delivers close on 160 million US dollars worth of technical assistance a year. It promotes foreign investment in developing country industries of 700 million US dollars a year. It also seeks to promote industrial co-operation between North and South, between East and West, and between the developing countries themselves.

Information has become a vital resource for social and economic development. The creation of a mechanism for the just distribution and use of world information resources has become one of the central issues faced by the international community.

It is certain that the role played by information in the selection and application of specific technologies and in the formulation of policies and strategies for industrial and technological development will become more crucial in the context of technological change.

New technologies will broadly affect industries and services, the organization of production and the pattern of comparative advantage. Technological advances in many modern fields bear far-reaching implications for the industrial and technological development of developing countries. Such advances need to be closely monitored and applied to upgrade the industrial and technological development of those countries, whilst avoiding any adverse industrial, economic, environmental and social impacts. The role of industrial, scientific, social, economic and other information is vital for this process. The problem is not only one of an increasing volume of diverse information, but also of the capacity to enjoy access to it through modern information transfer techniques and readiness and capabilities to turn it into an effective decision-support resource. Developing countries lack these capacities and the well-structured information systems and services that can serve both enterprises and Governments.

Thus, the role of information services like INTIB/UNIDO is to help the developing countries in the organization of information services and the formulation of information policies and to provide access to ever-increasing quantities of technological information and to present it in more attractive and easier-to-use ways and forms.

Access to UNIDO's own information resources is provided through INTIB, the Industrial and Technological Information Bank, and the whole network that INTIB has created during the last ten years.

Global Factors are Influencing INTIB Activities

Since the third meeting of the Advisory Group in March 1989, great changes have taken place in the world. They will influence the strategy of INTIB activities in the years to come.

1. The changes in Europe, which have led to the reunification of the two German States and to the change of the political and economic structures in East European countries, and the tremendous changes in the USSR, that have led to the formation of 15 independent states in place of the former unitary USSR. In Asia, similar

processes have taken place. In Latin America and in Africa great changes have also taken place. For the INTIB strategy these changes are important because from the economic point of view all the countries that have been oriented towards a centralized planned economy have declared a market economy in conditions of democracy and free enterprise. This certainly entails consolidation of the role played by the private sector in the development of small and medium enterprises (SME) in the industrial sphere and, hence, ever closer links and co-operation with UNIDO and INTIB.

2. There has been further development in the field of communications, information theory and practice, and informatics. The price of a PC and computer storage facilities has dropped. On the other hand, the memory capacity of a diskette and capabilities of CD-ROM technoloiges have increased. New effective software packages have appeared. However, the cost of transnational and transcontinental on-line transmission of information (and the cost of on-line access to databases) is still rather high. These factors will influence the networking strategy of co-operation between INTIB and NFPs, RFPs and Nodes in countries and regions announced in 1985 on the basis of INTIB activities.

3. There should be new approaches to technical, financial and other assistance to developing countries above all, from the point of view of the level of information infrastructure. These approaches could be based on new political and economic realities. Countries now exporting informatics hardware and possessing powerful intellectual resources, scientific and techni al information generators and a developed industrial potential have their own possibilities for development of an information infrastructure. INTIB's financial and other assistance should be directed first of all to NFPs and Nodes of the countries with very low living standards and low level of information and industrial infrastructure. The INTIB strategy should outline priorities.

ADVISORY GROUP OVERVIEW AND RECOMMENDATIONS 1985 - 1989

The Advisory Group institution was set up in 1985 as a continuing mechanism to review past experience and elaborate proposals for new qualitative and quantitative developments of INTIB. The work of the three previous meetings of the Advisory Group has been very useful and important.

Participation in the work of the Advisory Group by prominent experts from developed and developing countries has made it possible to reflect to a considerable extent the views of the world information community on the activities, strategy and future programmes of INTIB.

Each meeting (September 1985 - Round-table discussion, October 1986 and March 1989) included an overview of experiences of countries and organizations. Many papers presented by countries and experts at those

meetings reflected a variety of situations regarding needs, capabilities, modes of operations and organizational frameworks.

All the previous Advisory Group meetings stressed the growing role of INTIB as a valuable source of information on technology choices and INTIB ramified activities in the organization of UNIDO in-house information, collection, dissemination of information and further strengthening of developing countries' capabilities in information work.

One of the first recommendations of the first Round-table discussion was to re-orient the activities of INTIB. The re-orientation and new activities have to form the main elements of a medium-term programme for INTIB.

Re-orientation of INTIB activities meant in practical terms emphasis on networking as its main modus operandi. The new activities as a component of the medium-term programme were as follows:

(a) Information on available technologies and suppliers. It was proposed to include about 50,000 technologies by enterprises in developed and developing countries in a standard format;

(b) Sectoral dossiers which could be computerized and tapes (diskettes instead of INTIB activities based on "Guide to Sources of Information").

The first Advisory Group Round-table discussion confirmed the importance of the kinds of activities that were traditional for INTIB since 1980, such as the Inquiry Service, and recommended to expand its services, utilizing more effectively the INTIB nodes. The dissemination of information in the form of DTT series, TIES newsletter, IDA, UNIDO Newsletter and Technology Information Profiles was also recommended.

The first networking experiment was carried out in the framework of the IDDA project in Africa and including 10 countries. National experts, together with a UNIDO field mission team recommended that 67 national nodes should be included at that time.

The networking strategy was further developed at the Second Advisory Group Meeting. Two new developments were the basis for such a strategy. These were the information "explosion" and dramatic developments in information processing and communication technologies. So, INTIB can hardly hope to cover the increasing flows of information and answer all inquiries from developing countries. The formation of national or specialized nodes and their networking with the INTIB system have assumed special importance. Thus, ever greater emphasis has been laid on the identification and strengthening of national information institutions that can process inquiries using their own information capabilities and INTIB information resources and network. For the first time, a clear distinction was made between the NFPs as co-ordinating bodies for national efforts and the nodes as specialized operational units processing and handling industrial information.

The recommendations of the Second Advisory Group meeting fixed the main criteria for the selection of NFPs and nodes and for the determination of their role, activities and rights.

These preliminary considerations concerning NFPs and nodes were very important and will be further developed in the next three years by some UNIDO experts and consultants. There were two more important recommendations adopted by the Second Advisory Group Meeting.

The first one dealt with the problem of two hardware alternatives - mainframes and microcomputers. It was recommended to use both alternatives. It was important for NFPs, nodes and SME because it allowed to use PCs in the countries for the collection, storage and transfer of information and at UNIDO to use mainframes to store large volumes of INTIB databases. The second recommendation concerned the energy information system, particularly energy conservation in industry. Really, it was the first step to INECA and ENCONET.

The third meeting of the Advisory Group of INTIB in March 1989 developed further the networking concept. The statement delivered on behalf of Domingo L. Siazon, Jr., Director-General of UNIDO, to the meeting pointed out "....just as our endeavous to promote direct investment and joint ventures are conducted on a networking basis, a central part of the INTIB concept is its network. The judicious combination of a central clearing house with decentralization through a global network of information-gathering and dissemination points is an optimal means of ensuring the effective transfer of information essential to industrial co-operation.....".

The Director-General pointed out the first three priorities in the medium-term plan and the first among them - human resource development. It was clear that without the spread of the scarce information management skills and know-how, technological advances will be in vain.

Further development of this concept was one of the main recommendations of the Advisory Group meeting dealt with the location of the INTIB NFPs, their efficient operation. The necessity of human resources development was stressed.

The reliance on NFPs and RFPs and the concept of their interaction through networking emphasized at the second meeting and confirmed at the third Advisory Group meeting was a priority in INTIB activities.

Many recommendations adopted by the third meeting developed this main concept in INTIB activities directly or indirectly:

- Modern tools of information processing and transmission;

- The development of human resources;

- Setting-up packet switching telecommunications nodes;

- Development of national industrial information infrastructure(s);

- Model for NFP establishment and location;

- Further development of UNIDO information resources with priorities of INPRIS, IDA/INDIS and specific databases INECA, Cleantec Data.

Thus, it can be stated that the medium term programme recommended in 1985 and then developed in 1986 and in 1989 has been mainly implemented. The implementation of this programme has made it possible to:

1. Strengthen INTIB as the centre of the global networking interaction among focal points dealing with industrial and technological information. INTIB successfully continued traditional activities of the inquiry service and dissemination of information, and as a clearing house with emphasis on generation of data bases;

2. Set-up a global network of regional and national focal points of INTIB;

3. Develop the philosophy and technology of the telecommunication between INTIB, RFP and NFPs, external and commercial databases as well as those of the UN system;

4. Develop and implement the philosophy of raising qualifications and train personnel (human resources development) for developing countries.

REVIEW OF INTIB ONGOING ACTIVITIES

The Industrial and Technological Information Bank (INTIB) is the major mechanism and structure through which UNIDO transmits reliable and continuous information to developing countries through an established networking strategy.

INTIB coordinates UNIDO's industrial and technological information activities. It answers inquiries through its Industrial Inquiry Service and actively disseminates information through its network system of focal points and nodes, and its publications. The network enables INTIB to strengthen the systems through which information flows to and from developing countries.

Through these modes of operation, INTIB serves as an interface between users and the wealth of information stored in the data bases of UNIDO, the UN system as a whole, and other systems. INTIB also encourages and assists the establishment of data bases in developing countries.

Industrial Inquiry Service

The oldest and most traditional activities of INTIB is the Industrial Inquiry Service (IIS) operated since 1980 with special emphasis on SMEs. During the last ten years IIS received about 27,000 inquiries, either directly, from industrialists, government policy-makers and others or routed via INTIB's network of RFPs and NFPs. Unlike most international services, concrete, practical information is supplied, packaged in response to specific needs. Apart from in-house data on a large number of subsectors, IIS can tap the resources of 300 network correspondents and on-line data bases. The recent analyses of IIS activites was made my Antonio Maza and Rainer Seegmüller.

Rainer Seegmüller's analysis demonstrated continuous breakdown of total number of inquiries from about 4,200 in 1981 to 1,300 in 1991. The staff cost per inquiry along was US$106 in 1991. Certainly these data should be taken into consideration for pricing of any INTIB product and services and cost recovery strategy.

In view of further activities of IIS, it is necessary to take into consideration some factors. The first is that INTIB is broadening its activities in new types of services and data bases like TECHMART, INTELL and an information referral system.

A second factor deals with the existence of NODE's, RFPs and NFPs. The idea behind its creation was to reduce the pressure of inquiries coming from local users to INTIB. Reducing the number of requests coming directly to INTIB/IIS in favour of important and financially big ones remains one of the priority tasks of INTIB.

Networking Concept in Operation

The INTIB network of NFPs and NODE's is based on the idea of decentralized data colleccion and dissemination. These network points are also geared towards providing industrial inquiry services, either locally or regionally with INTIB and its information sources providing support.

In this concept, INTIB is the hub of a networking system of NFPs and RFPs. The NFPs pass inquiries to INTIB or to RFP, but first has to provide their own answers, tailored to local conditions. An important task of NFPs is that of packaging information in appropriate forms, both for local users and to feed into the central INTIB data bases.

There are now over 70 NFPs and new centres are added every year. They are linked to NODE's, which are specialized sources of information such as chambers of commerce, industrial associations, R&D institutions and some others.

The Regional Focal Points serve to maintain communications with INTIB and NFPs, build up and maintain data bases and strengthen national information infrastructures within their regions. The following are already in existence: the African Regional Centre for Technology (ARCT), for Africa; the Asia and Pacific Centre for Transfer of Technology (ACPTT), for Asia; and the International Centre for Scientific and Technological Information (ICSTI), for Europe. The functions of an RFP in Latin America are entrusted to FIESP.

The INTIB network system aims to make the most of new information technologies. One facet of this activity is the provision of standardized harware and software, to enable efficient exchanges of information. Missions, workshops and seminars were organized during the last three years by INTIB to assist NFPs in using new technology. An important aim of the whole networking system is to provide concrete, practical information in response to specific inquiries and needs, rather than simply acting as a bibliographical service.

In order to have a successfully operating INTIB, it is important to have priorities and flexible plan to provide:

- Networking between INTIB and NFPs - Networking between NFPs and external sources of information - Networking between NFPs, local entrepreneurs and enterprises - Up-to-date data transmission technologies use to communicate with all participants of the networking.

INTIB Telecommunications

The viability of telecommunication links in the developing regions is the technological wild card. The infrastructure does not exist in most regions to allow for direct computer-to-computer communications. When it does, the potential for downloading information from full text and bibliographic data bases, on a selective basis, could make an enormous difference to the quality of information provision.

INTIB made considerable efforts during the last two years to choose appropriate techniques and technologies to connect to as many computer data networks as possible to allow National Focal points flexibility in choosing the network with which they prefer to communicate.

UNIDO's Information Resources

The information resources that INTIB generates are used both by UNIDO's technical staff in the substantive sections (branches of DIO, DIPCT and DPPD) and by NFPs, PFPs, and NODE's. They are present in traditional form as printed publications as well as in machine readable files that are accessible on-line .

UNIDO Memory

The various data bases on which INTIB draws and which it develops are usually described as UNIDO's institutional memory. The following brief summary gives an idea of the wealth of information--much of it unique--available only through INTIB.

INDIS: The Industrial Information System is a computerized form of the Industrial Development Abstracts (IDA). INDIS contains UNIDO-generated information held as over 19,000 titles and abstracts. Some 100 new entries are added each month, covering technical and other reports, feasibility studies, working papers presented at UNIDO meetings etc. Access is on-line.

LINK: The On-Line Information Key is an integrated data base of directories of research and development institutions for specific topics or sectors such as metallurgy, non-ferrous metals, industrial biomass, solar energy; it gives access to information generated outside UNIDO.

TSDB: Technology Supply Data Base contains information on technology offers and requests and joint venture opportunities. The ultimate objective of this data base is to promote industrial development, the restructuring of industry and in particular the transfer of technology by means of providing information support. The system provides information on:

* Offers of technology: products and processes;
* Requests for technology: products and processes;
* Invitations for joint ventures;
* Offers for joint ventures.

INPRIS: The Investment Promotion Information System is concerned with investment opportunities. It consists of machine readable data files concerning projects, investors, enterprises, development banks, institutional information sources, companies interested in redeploment and country investment profiles.

TSDB currently contains over 4,000 technologies.

TIES: The Technological Information Exchange System (TIES) handles information abstracted from technology transfer agreements concluded by the countries participating, which must agree to do so on a confidential and reciprocal basis. The Computerized Registry Information System (CORIS) is a micro-computer version TIES, used locally by TIES members.

UNIDO Statistical Data Base is the central reference point for statistics on the manufacturing sectors of 80 countries.

External data bases with a total of 40 million records are available from many data bases. The joint UNIDO/IAEA library in Vienna has access to a number of bibliographic and directory-type data bases. In addition, INTIB has joint programmes and co-operation agreements with a number of international organizations, especially from UN family.

The importance and global scale of problems concerning energy conservation and environment projection has lead the INTIB to start its own innovative approach to these problems. Two new data bases relevant to these topics have been initiated.

CLEANTECH DATA: The objective of this data base is to ensure the collection and dissemination of environmental information in accordance with UNIDO's Environment Programme, which initially will focus on the sub-sectors in the bottom left box on the transparency. The primary concerns will centre around industry's production of hazardous wastes--gaseous, liquid and solid.

INECA: The Industrial Energy Conservation Abstracts. This data base is intented to collect and disseminate information on energy saving and conserving industrial technologies. The inputs for INECA are a by-product of the INECA Network (ENCONET). The network consists of 15 centres.

Inspite of two years operation both Cleantech and INECA become very popular in developing countries. Micro-Metadex-PLUS is a micro-computer version of the on-line database METADEX produced by Materials Information, UK and Information and ASM International, USA. It provides developing countries with a means of accessing thousands of recent R&D abstracts on materials technology and related topics.

Publication Programme

From the very beginning INTIB started its activities with a number of publications. These activities have taken a variety of forms. During the first 5-6 years, it was only paper products. Then all information was typeset in machine readable form. In this way the information could be output both on paper and in machine readable form as diskettes.

Now as a general consideration one could state that the thematic scopes and variety of publications have changed. Many publications have been stopped or have been transferred to new sections of UNIDO. However, the popularity of the publications that are an ongoing part of INTIB's activities continue to grow.

The publications like Industrial Development Abstracts, Technology Offers/Requests, Joint Venture Opportunities, Directories/Guides to Information Sources, Manuals, Guidelines are still issued.

During the last two years INTIB began to produce new journals and periodicals. They are INTIBNET, Environmental Awareness Bulletin; INECA Journal; Industry & Environment (A Guide to Sources of Information). All of INTIB's publications now are being created using DTP techniques. It allows the dissemination of information in both electronic and printed forms.

INTIB has enough capabilities and staff to prepare and print its journals and periodicals. However, the mechanism of destribution and advertising is in the hands of big commercial publishing and distribution companies like Elsevier Science Publisher, Springer-Verlag and others. That is why INTIB should continue its co-operation with commercial publishers. It allows in-house costs to be minimized and income to be generated for the organization.

VISION FOR THE FUTURE

The INTIB strategy for the 90's could be considered as a combination of traditional activities that have given positive results with new kinds of activities that have been started recently with considerable positive perspectives.

Networking as a central part of the INTIB concept will remain for the future. It means future strengthening of NFPs and intensification of REPs interaction with the NFPs. INTIB has to help NFPs to establish more close and effective cooperation with the NODE's. The efforts of INTIB to assist NFPs should be in new information technologies implementation, computers, standardized software and INTIB data bases delivery, human resources development and improvement of data transmission technologies. The aim of

these efforts is more effective exchange of information between INTIB and components of the network.

Special attention should be given to the Regional Focal Points (RFPs), together with ARCT, ACPTT, ICSTI and FIES. They will maintain communication with INTIB, build-up regional data bases and strengthen the sub-networks within their regions.

In the future the necessity to strengthen INTIB further will be obvious. It will be necessary in order to increase the efficiency and performance of UNIDO staff and the Organizations's capacity to collect, process, store and disseminate industrial and technological information. INTIB must be able to tap the flow of information coming to the desks of UNIDO's technical staff.

A mechanism is required using the new UNIDO mainframe, to process, store and provide access to all information which is generated by UNIDO as a whole.

On the other hand the strengthening of INTIB and enlarging of its information resources and capabilities and more effective provision of information services are also necessary for interaction with NFPs and RFPs. For these purposes the maintainance, updating and enlarging of INTIB data bases must be continued. Initially this should concern those data bases that have demonstrated high efficiency and that have been in strong demand.

The more effective use of information and data that are stored in data bansk and the need to transform information into knowledge necessitates new methods and approaches. Value-added services and expert system technologies could be mentioned in this regard.

Value-added services are provided by combining available information with human expertise. In such cases the output resulting from the different on-line searches is used by specialists of specific countries or industrial sectors, with a view to preparing proposals for consideration by the Government of a specific country, regarding the industrial sector as a whole or selected subsectors, branches.

An in-depth analysis and evaluation of the information from several data bases can be performed by experts, with a view to preparing a highly selective and fully relevant list of technology and/or joint venture offers for consideration by the Ministry of Industry, a group of entrepreneurs etc. in a specific country. Special attention will be paid to the greatest possible number of factors, limiting or promoting the transfer of a certain technology to a particular country. Such expert studies will be based on complementary data bases, containing detailed information on the countries.

The value-added services will be launched by selected INTIB focal points, in particular in countries where access to other international/UN data bases is already available.

The prospects of expert systems as a very powerful information tool for information and data retrieval and analyses are great.

However, special investigations will be necessary to evaluate expert system possibilities to resolve the specific tasks that INTIB is faced with.

INTIB's publication programme has been changed considerably during last years. For planning this programme one must take into consideration that publishing consists of many processes. This is a chain. The collection of data and information, their processing and then printing are at the beginning of the chain. The market or the end users is at the end of the chain. It is clear that big commercial publishing and distributing companies dominate the books and journals market today. This is why INTIB's strategy and publishing programme must be co-ordinated with commercial companies which can distribute INTIB's published products on the market. Such an approach will not only allow INTIB to avoid unsuccessful and even unprofitable publishing programmes, but also generate income from this programme for UNIDO.

The future prospects for INTIB activities cannot be isolated from privatization and commercialization of the information and publishing spheres, which is an on-going world wide process. Fortunately, INTIB met this global tendency with some innovative projects. The aim of these initiatives was income generation for UNIDO using its services, information resources and products.

All of these new activities can be considered as an integrated process that leads to new investments and technical co-operation projects.

The more prospective innovative projects are mentioned below:

Information and technology marketing. INTIB began to produce and to sell some of its information products:

IDA in printed and microfiche formats are on sale under agreement with UN.

New printed/computerized version of the Guide to Information Sources on Energy and Environment is being marketed by a commercial company with royalty for UNIDO.

Data bases of Materials Technology and Food Science and Technology downloaded to diskette versions will be distributed on a commercial basis to all other outlets.

Techmart - Technology Licensing Fair. This activity was initiated within the framework of the Work Programme for 1990-1991 and is intended to be the supplementary information support for small and medium enterprises (SMEs).

The Technology Supply Data Base (TSDB) provides the fuel for the Techmart concept. SMEs in the devloping countries have never had access to an event where they could compare directly the technologies on offer, both from developed and other developing countries, that could meet their production and process requests. Nor has the competition to supply their needs been adequately stimulated.

The concept of a technology marketplace is of only recent origin in developed countries where it is now rapidly gaining ground, not only as a means of buying and selling the rights to a product or process, but also to enable the sources of technology to promote more rapid acceptance by offering licences to several manufacturers or users in different countries, instead of trying to capture a world market from a single location.

The arguments for holding a technology market to assist developing country entrepreneurs with their choice of technology is a forceful one. In combination with existing UNIDO activities it becomes at once both the gathering ground for live and current offers and requests and the testing ground where the problems of matching the entrepreneur and his business with the technology, the investment and the sources of advice are brought out into the open in the form of live meetings.

INTIB's strategy is basically to use the existing joint venture requests in the Technology Supply Data Base to encourage the participation of organizations with corresponding licence offers and to use the technology offers in the data base to stimulate the interest of entrepreneurs in visiting the Technology Transfer Fair.

The first Techmart fair will be held in Beijing, China. 70 representatives of companies and enterprises from 25 both developed and developing countries will participate in the fair. The format will be repeated in different geographic regions to facilitate access for entrepreneurs from other UNIDO member countries.

Better use of technological fairs will be made for the commercialization/sale of UNIDO products such as the Technology Suppliers Data Base, Directories, IDA in PC format, Materials/Food Technology Data Bases, Propspin and other investment-related data bases.

The Referral System is another innovation of INTIB. The core of this initiative is decentralization of the supply of information. This objective can be obtained through a better use of the Focal Points network. The main tool for such a decentralized approach consists of ad-hoc directories.

UNIDO/INTIB will supply a new type of service, helping the creation, in collaboration with the Governments of Member States, of standardized directories of National sources of industrial and technological information. These directories enable INTIB clients to make direct well targetted inquiries and to get useful information on appropriate sources with indications on the types of packaged information services provided by these sources.

Copies of the directories will be disseminated to the INTIB NFPs and RFPs. The collected information will be also stored in a new computerized data base with all details concerning the information sources. This new Referral System will be an excellent way to optimize the limited INTIB resources and should be a very valuable way to answer requests for information.

In order to make a test the concept of the project it was decided to start with one initial directory and to learn through a first co-operative experience.

A pilot project was developed in 1990 with France: A directory on French Sources of Industrial and Technological Information has been prepared and published in co-operation with the French Government, the French Focal Point and INTIB.

As a new concept the efficacy of the referral system, which is in its pilot stage, should be evaluated through team work. This will integrate the different viewpoints, with special attention to the costs of the system.

INTELL is a new activity currently being explored. INTELL means - Technology-economic intelligence. UNIDO is helping developing countries to gain access to scientific knowledge and frontier technology through its plurinational centres - ICGEB, ICS, International Centre for the Assessment and Application of Materials - and through North-South R&D co-operation programmes. Some other international centres are in view. Access to technological information and technological knowledge and other information is provided through its technology monitoring activities and through the services of INTIB.

These activities and services are intended to be integrated in the INTELL concept into a package that forms a decision support tool. The market for this integrated package will be a special kind of informative product: Content-specific and focussed towards a decision-making situation.

It is intended to be highly elaborated in terms of possessing considerably greater informative value than the data extracted from the original information sources. INTELL will provide processed information packages for decision-making that include all the above categories of information and in addition business, market, economic, social and political information.

The INTELL ideologist considers that UNIDO needs to establish its own inhouse INTELL operation. In so doing, the methodologies it develops and adapts and the computer-based tools it designs can be used as the basis for setting up and operating INTELL units in developing countries, either nationally or regionally.

Many of the tasks involved in a successful INTELL operation are already being carried out in UNIDO and many of the capabilities and resources required to establish such an in-house INTELL operation are already in place or would only need some re-organization or re-allocation.

For many new proposals, projects and initiatives, however, a clearly defined marketing strategy has to be developed. The pricing strategy alone with income generation needs to be planned.

In this regard, a marketing team should be put together, including external expertise, so that operational ideas, methodologies, target audiences, events analysis and a detailed business plan can be developed.

It would be more encouraging to work on a commercial incentive basis, which means that any income should be treated as a revolving fund and be ploughed back into the activities that generated it. For such a system to work, a separate account for information activities should be established as a first step.